The effect of oral caffeine intake on the perceived wakefulness in individuals with and without ADHD

Scientific Writing

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Abstract

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Introduction

Methods

Results

To investigate a possible correlation between the neurobiochemistry of ADHD and the effect of caffeine on perceived wakefulness, we recruited twelve healthy individuals and twelve individuals diagnosed with ADHD. Both groups were equally split into a group that was administered 30 mg of caffeine in the form of coffee and a group that was given the same amount of decaffeinated coffee, minimizing the possible effects of other compounds on our measured parameter.

Our measurements revealed a significant correlation between caffeine intake and perceived wakefulness in healthy individuals (average increase of 30%, $p = 0.005$) while not showing any significant differences for the group of ADHD patients (no increase / decrease, $p = 0.81$) as shown in Figure 1. This has also been corroborated by previous studies. (Leon 2000)

In summary, we found that neurotypical individuals display a significant stimulatory response to oral caffeine consumption while individuals with ADHD did not show signs of increased wakefulness after intake of 30 mg of caffeine.

Discussion

Declaration of Interests

The authors declare no competing interests.

Author Contributions

Figures

References

Leon, M. Roth. 2000. "Effects of Caffeine on Cognitive, Psychomotor, and Affective Performance of Children with Attention-Deficit/Hyperactivity Disorder." *Journal of Attention Disorders* 4 (1): 27–47. https://doi.org/10.1177/108705470000400103.

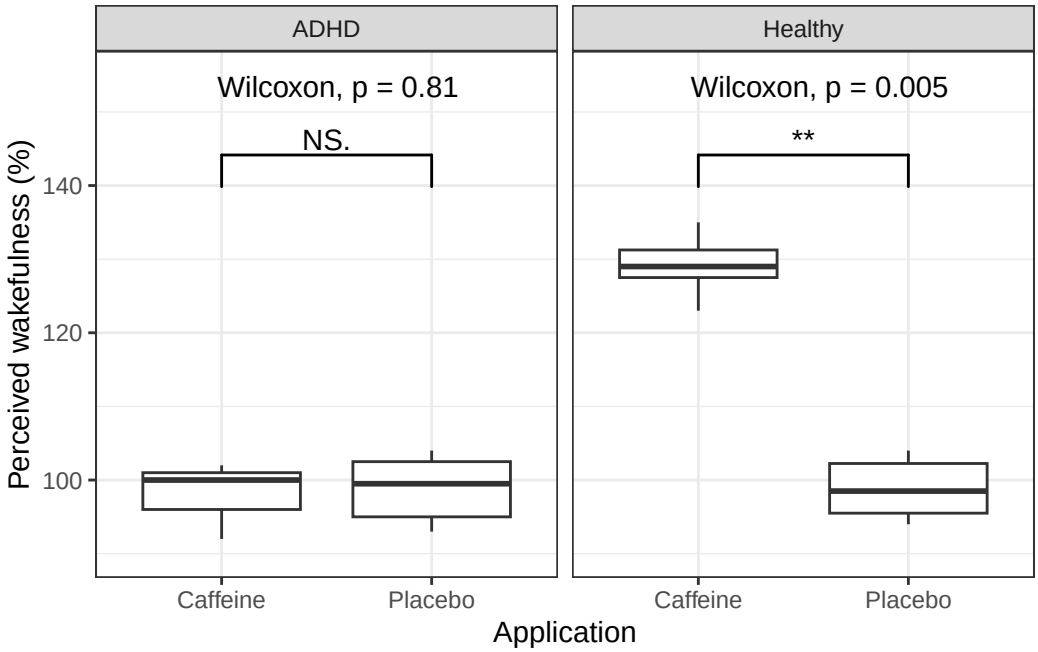

Figure 1: Effect of oral caffeine intake on the perceived wakefulness of healthy individuals and ADHD patients. Caffeine group was administered 30 mg of caffeine in form of coffee. Placebo group was administered decaffeinated coffee. 100% perceived wakefulness corresponds to normal wake alertness. Twelve individuals in each health status group. Six individuals per application. NS. = Not significant ($P > 0.05$); ** = Significant ($P <= 0.01$)